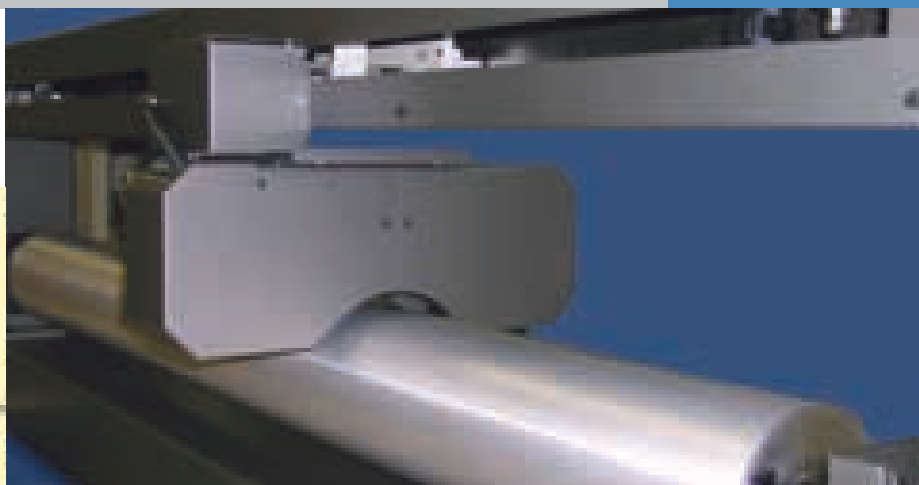


The Thermo Scientific ShadowMaster thickness gauge provides accurate and reliable measurement of a variety of materials, leading to greater process control, improved quality and increased productivity. It offers a fast installation, low cost of ownership and a high return on investment.

Thermo Scientific ShadowMaster

Direct Thickness Gauge



Features

- Thickness measurement is not influenced by material type, color or density
- Non-nuclear and license-free
- Non-contacting, no web marking
- No instrument air or water utility requirements
- Fast installation, easy to use
- High reliability and ease of maintenance
- Does not require regulatory licensing, protective gates or interlock devices

Applications

- Extruded sheet
- Calendered sheet
- Foam
- Rubber
- Composites
- Coated substrates
- Multi-layer and embossed materials

The Thermo Scientific ShadowMaster gauge provides non-contact, online thickness measurement of a moving web. The gauge's sensors are designed to deliver accurate thickness measurement of medium-to-heavy materials from 200 to 6500 microns (8 to 260 mils). The ShadowMaster measurement package comprises optical, inductive, and temperature sensors.

A 30-mm beam of diffused LED light is emitted from a transmitter in a parallel, uniform manner across a tall, narrow window aperture. This light is focused on a detector array (receiver) on the other side of a reference roll. The material running over the roll interrupts the light path to form the measurement principle. An integrated inductive sensor provides the roll position. The material thickness is computed as the difference between the inductive sensor and the optical sensor measurements.

The maximum gap between the inductive sensor and the reference roll is 8 mm.

The 159-mm (6.25-in) diameter reference roll is made of non-magnetic, durable 316L stainless steel. Air scan compensation is used to eliminate any residual reference roll and frame rail run-out variations. Temperature compensation has been incorporated to balance the thermal effects seen by both the optical and inductive sensors. This provides greater measurement stability over a wide range of environmental temperatures.

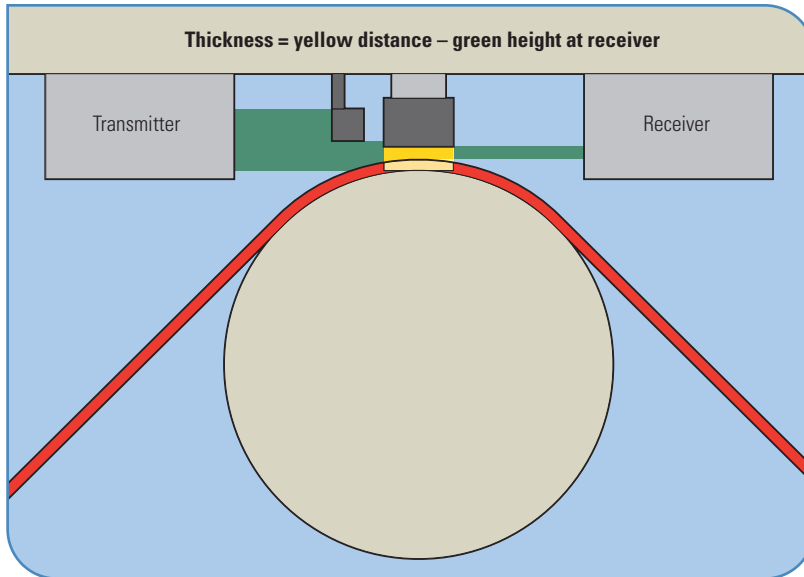
The ShadowMaster can measure material with a variety of surface finishes including rough and glossy. The measurement is insensitive to the product color, transparency and opacity. ShadowMaster can also measure the total thickness of single, multi-layer and embossed materials. Metallic materials however, must be excluded.

Thermo Scientific ShadowMaster

General Specifications

Measurement Range	200 μm to 6500 μm (7.8 mils to 256 mils)
Static Repeatability (2σ)	$\pm 1 \mu\text{m}$
Dynamic Repeatability (2σ)	$\pm 2 \mu\text{m}$ (based on 20 scans)
Response Time	15 msec
100% Streak Response	1.6 mm (0.063 in)
Sheet Temperature Range	Model SHD00-00: up to +45°C (+113°F) Model SHD00-01: up to +60°C (+140°F)

ShadowMaster Method of Operation



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